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CONTRACEPTION WITH INTRAUTERINE CONTRACEPTIVE DEVICE (IUCD) IN PORT HARCOURT, SOUTH-SOUTH NIGERIA.

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ABSTRACT

Clinical experience with intrauterine contraceptive device (IUCD) at the Family Planning Clinic of University of Port Harcourt Teaching Hospital between 1st January 1997 and 31st December 2006 is presented. This was a descriptive retrospective study aimed at determining the uptake rate as well as the effectiveness, side effects and reasons for discontinuation of IUCD in Port Harcourt. Out of 10,052 acceptors of contraception during the study period, 1,632 used IUCD constituting 16.2% of acceptors. Their mean ±SD age and parity were 33.52 ±4.6 years and 3.8±2.6 respectively. The mean duration of use was 20.82±2.35 months. Majority of the clients were married (90.4%), educated (98.9%) and christians (97.2%). Out of the 1,504 women who used IUCD within the study period 310 (20.6%) had side effects. The prevalent side effects were menorrhagia (30.3%) and vaginal discharge (20.8%). The commonest reason for discontinuation was desire for pregnancy (42.0%). Hospital personnel were the main source of information on IUCD. One accidental pregnancy occurred (pearl index of 0.007 per 100 woman years). IUCD is an effective method of contraception in Port Harcourt ; comparable to worldwide experience. The low uptake rate calls for concerted effort to create more awareness about it especially in the rural areas/ non literate population.

INTRODUCTION

Intrauterine devices have existed for centuries. Historians attributed its origin to the Arabs who stuck pebbles into the uteri of their camels to prevent them from getting pregnant on long trips across the deserts or to markets[1]. The intrauterine contraceptive devices have been in use for several decades. It is the commonest method of contraception amongst women in developing countries[2,3,4]. About 85 million women who use it worldwide have found its use to be safe, effective and convenient[3]. Recently researchers have developed second generation IUCDs which are improvements over the first generation inert IUCD. These second generation IUCDs are medicated in that the IUCDs are delivering either copper or hormones implanted on them. The copper impregnated IUCD are much more effective than the inert first generation IUCD with less side effect profile. The TCu380A

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which is the predominant IUCD in our family planning unit is one of the three most effective IUCDs developed by the population council and has greater copper content[5,6]. It has an improved design with the vertical arm of the polyethylene T-shaped device bearing 314mm^2 copper wire on it and each of the arms of the T-shaped device bearing 33mm^{2}solid copper sleeve[7].This device is said to stimulate a pronounced inflammatory reaction in the endometrium. These changes may interfere with the transportation of sperm in the female genital tract and possibly damage the sperm or the ova so that fertilization is impossible[6] .

Though IUCD is currently the most commonly used reversible method of birth control worldwide, it is not without side effects. These include pelvic inflammatory disease, increased risk of ectopic pregnancy as well as accidental pregnancy, expulsion, transmigration, coital difficulties, and menstrual abnormalities resulting in high discontinuation rates in some studies[7]. Geared towards ameliorating these side effects, new IUCD such as gynaefix and levonogestrel impregnated IUCDs (mirena) were developed; especially the problems of expulsion and menstrual abnormalities.

Generally pregnancy rates for current IUCD in use (including TCu 380A) are less than 1 per 100 woman years and they have been found to be as effective as implants, injectable contraceptives and voluntary maleor female sterilization[8,9,10] .Available studies in Nigeria put IUCD users in the range of 47 to 66% of contraceptive acceptors in different family planning centers[8-14] and it is used longer than other reversible contraceptive methods. However, despite all these, a negative perception of IUCD among health care providers and potential users have continued to affect its use, especially in Nigeria.

The objective of the study therefore is to determine the acceptability, effectiveness and side effects of IUCD amongst our clients and compare with experience elsewhere.

MATERIALSAND METHODS

This study was a retrospective descriptive study. The case files of all clients who accepted intrauterine contraceptive device between 1st January 1997 and 31stDecember 2006 were retrieved from the family planning clinic of the University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt. The data for the study was collected in 2007 following the movement of the UPTH to its permanent site in October 2006. The family planning clinic has its own records that are not in the main hospital records. This makes it easier for the retrieval of

records of these clients. Ethical approval was given by the hospital ethics' committee. Out of the 1,632 acceptors who used IUCD within the study period; 1504 (92.l%) case files were retrieved. The remaining files were probably lost during the movement of the hospital to the permanent site. The clients were counseled by trained family planning nurse practitioners and physician and were allowed to make informed choice based on their needs and the available contraceptives for which they were suitable. Following this, a full medical history was taken and clinical examination performed. Clients who were offered IUCD were those with normal menstrual periods and who do not have history or clinical findings suggestive of pelvic inflammatory disease. Pregnancy was usually excluded by urine pregnancy test. The family planning practitioner thereafter inserted the IUCD under aseptic conditions and the clients placed on monthly appointments at the family planning clinic. At each visit all the complaints volunteered by the clients were documented. Clients who do not report for two or more consecutive scheduled visits are usually regarded as lost to follow up. Most of the clients lost to follow up were contacted through their phone numbers and majority claimed to have relocated and were utilizing other family planning clinics.

Data collected included the clients' age, religion, educational status, parity, source of information, desire for further child bearing, duration of use, side effects, reasons for discontinuation and accidental pregnancies. These were coded and entered into a personal computer with graphical and statistical packages using SPSS 15version and presented as percentages, means, standard deviation, frequency tables and bar chart.

RESULTS

Out of the 10,054 total contraceptive users during the study period,1,632 clients accepted IUCD giving an uptake rate of 16.2%. This excluded those who collected condoms and other barrier methods. Only 1,504 case files were retrieved giving a retrieval rate of 92.1%.

The age range of the client was 17-51 years, with a mean age of 33.52±4.6 years. Nine clients (0.6%) were aged less than 20 years while 485 (32.3%) were aged 35 years and above as shown in table 1. The parity ranged from 0-12, with a mean parity of 3.8±2.6. Ten (0.7%) clients were nulliparous while 445 (29.6%) were grandmultiparous. Most of the clients (98.9%) had formal education, are married (90.4%) and Christians (97.2%).

Hospital personnel were the leading

TABLE 1:SOCIODEMOGRAPHIC CHARACTERISTICS OF IUCD ACCEPTORS

VARIABLES	FREQUENCY	PERCENTAGE
AGE (YEARS)	**N=1504**	**(100%)**
<20	9	0.6
20 - 24	25	1.7
25 -29	315	20.9
30 - 34	670	44.5
35 - 39	417	27.7
≥40	68	4.5
PARITY		
0	10	0.7
1	137	9.1
2 -4	912	60.6
>4	445	29.6
EDUCATIONAL LEVEL		
None	16	1.1
Primary/koranic	129	8.6
Secondary	758	50.4
Tertiary	601	39.9
MARITAL STATUS		
Single	102	6.8
Married	1360	90.4
Divorced/widow	42	2.8
OCCUPATION		
Student / unemployed	330	21.9
Trading	317	21.1
Public/ civil servants	857	57.0
RELIGION		
Christianity	1462	97.2
Islam	24	1.6
Others	18	1.2

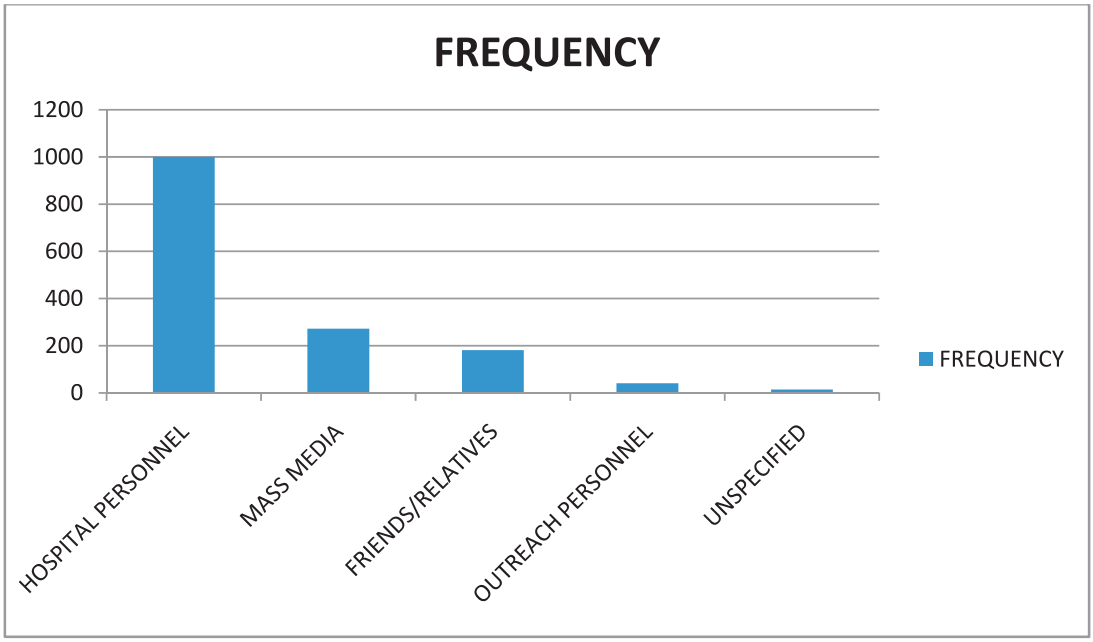

FIGURE 1: SOURCE OF INFORMATION

TABLE 2: SIDE EFFECTS OF IUCD ACCEPTORS

SIDE EFFECTS	FREQUENCY	PERCENT
MENSTRUAL DISRUPTIONS		
Menorrhagia	102	30.3
Amenorrhoea (2^0)	50	14.8
Hypomenorrhea	10	2.9
Dysmenorrhoea		20.6
INSERTION RELATED		
Missing IUCD	18	5.3
Expulsion	9	2.7
COITUS RELATED		
Coital discomfort	8	2.4
Coital bleeding	2	0.6
PREGNANCY RELATED		
Accidental Pregnancy	1	0.3
OTHERS		

Vaginal discharge	70	20.8
Lower abdominal pains	63	18.7
Pelvic inflammatory disease	5	1.5
TOTAL	**337**	**100**

X Total number of Subjects = 1504
XX Total number of Episodes of side effects = 337 (22.4%)

TABLE 3: REASONS FOR DISCONTINUATION OF IUCD

REASON	**FREQUENCY**	**PERCENTAGE**
Due for removal	33	5.1
Pregnancy related complaints		
Desire for pregnancy	271	42.0
Accidental pregnancy	1	0.2
Menstrual disruptions		
Menorrhagia	98	15.2
Amenorrhoea	11	1.7
Spouse Related		
Husband's request	32	4.9
Husband's death	3	0.5
Insertion Related		
Missing IUCD	18	5.3
Expulsion	8	1.2
Weight Related		
Weight loss	3	0.5
Weight gain	1	0.2
Specific Medical Disorder		
Hypertension	1	0.2
Others		
Method change	42	6.5
Vaginal discharge	40	6.2
Abdominal Pains	39	6.0
Waist Pains	8	1.2
Unspecified	36	5.6
TOTAL	**645** [xx]	**100.0**

xTotal number of subjects = 1504
xxTotal number of IUCD removals = 645 (42.9%)

source (66.2%) of initial awareness of IUCD followed by mass media (18.1%) amongst others as shown in figure 1.

Nine hundred and twenty (65.8%) of the clients used the IUCD for child spacing, four hundred and eighty two (32.2%) for permanent contraception, while 2% was uncertain. Amongst the grandmultiparous clients 302 (67.8%)used it for permanent contraception, 138 (31.0%) for child spacing, while 5 (1.2%) were uncertain.

Three hundred and ten women (20.6%) had side effects from IUCD use while 1,194 (79.4%) were without side effects. Menorrhagia (30.3%), secondary amenorrhoea(14.8%), vaginal discharge(20.8%) and lower abdominal pains (18.7%) were the most prevalent side effects. The 63 (18.7%) cases of lower abdominal pains were non-specific abdominal pains where clinical and labouratory evaluations did not reveal any specific cause. The least common side effects were dysmenorrhoea and coital bleeding(0.6% each) as shown in table 2. Eighteen(5.3%) of the clients had missing IUCD. Thirteen of the missing IUCD were recovered from the uterine cavity, four from the pelvic cavity and one from the urinary bladder.Twenty seven of the clients(10.3%) had multiple side effects. Accidental pregnancy occurred in one 33 year old multiparous housewife after twenty eight months of use. She subsequently carried the pregnancy to term and delivered a live normal male baby weighing 3.1 kg with Apgar scores of 7 and 10 at the first and fifth minutes respectively. The IUCD was expelled with the placenta and membranes. This accidental pregnancy gave a Pearl pregnancy rateof 0.007 per 100 woman years.Only five of the clients who required laparotomy for removal of their missing IUCD needed admission as the other side effects were managed on outpatient basis.
Six hundred and forty-five (42.9%) of the clients discontinued the method during the period of study. The common reasons for discontinuation were desire for further pregnancy (42.0%), menorrhagia (15.2%), change of method (6.5%) and vaginal discharge (6.2%) amongst others. About 5.1% of the clients had the device discontinued after the recommended duration of use as shown in table 3. The mean duration of use ±SD was 20.82±2.35 months. Thirty eight (2.5%) of the clientswere lost to follow up during the study period.

DISCUSSION

The uptake rate of intrauterine contraceptive device in this study was 16.2%. This is similar to the prevalence rate inmost studies from developing countries but higher than that in some developed countries with prevalence of 7.6%[15]. China has the highest prevalence rate of 49.8% due to effective birth control policy with over 100 million Chinese women relying on this method of birth control[15,16]. In similar studies in Enugu and Ilorin high prevalencerates of 64.7% and 55.4% have been reported[8,16,17].

Majority of our clients were aged 30-34 years (44.5%) and only 9 (0.6%) were less than 20 years. This may be because of the observation that women less than 20years have higher rates of expulsion than older women[16,18].The new gynaefix IUCD with lower expulsion rate, when available in our centre, would be more suitable for this age group, since unwanted pregnancies have been found to be higher among this age group in our environment[19].All the teenagers in this study were married and were in stable relationship and opted for IUCD as a long term contraceptive method and they also constituted majority of the nulliparous women in this study.

Multiparous women constituted the majority of clients offered contraception in our centre while nulliparity accounted for 0.7%. In the Enugu study, no nulliparous client was offered IUCD[16]. This is because of the fear expressed concerning future fertility following discontinuation[16]. However, other studies have shown that women who use IUCD have fertility rates in the first 6-12 months following discontinuation similar to non users and suggested that such fears should be abandoned[20].

About 98.9% of the acceptors had formal education.Previous studies have also found that educated women tended to use contraception more than the uneducated[16,21]. It is probable that career pursuit and knowledge may account for such difference.

The predominance of Christians in index study is not surprising because of the Christian background of the population as illustrated in earlier study[22]. In the northern part of Nigeria, studies with IUCD have shown similar trend where the population is predominantly Muslims[17,23].

The source of awareness of family planning methods and availability is very important if we are to make progress in women's reproductive health, because this is the source through which they get the knowledge that can influence their health seeking behaviour. In this study, majority of the women identified hospital personnel as the major source of their information. This is similar to the report from Sokoto and Ilorin[17,23]as against the report from Ibadan, south West Nigeria in which the mass media accounted for 63.1% of information[17,19]. To have an increase in contraceptive prevalence, the source of information should go beyond the hospital personnel into the communities especially via the mass media as the larger proportion of our women may never have the cause to go to the hospital for treatment. It is worthy of note that some Non-governmental organizations, Family planning based organizations, Community based organizations have contributed immensely in contraceptive awareness.

About 65.8% of the clients desired further child bearing, while 2% were not certain. This is a reflection of the desire for large family size in developing countries. The

proportion of grandmultiparous women desiring further childbearing was rather high, considering the fact that pregnancy in a grandmultiparous client is a high risk pregnancy[24].

The predominant side effects in our study are menorrhagia, secondary amenorrhoea, vaginal discharge and lower abdominal pains. Only 10.3% of the clients had multiple side effects. The common reasons for discontinuation of IUCD were desire for further pregnancy (42.0%) and menorrhagia (15.2%) amongst others. About 96.0% of those who complained of menorrhagia had their IUCD removed. Such clients would have been offered levonorgestrel IUCD which has been shown to reduce menstrual blood loss[25,26].

Vaginal discharge was the reason for discontinuation in 40(6.2%) of the clients. Studies have shown that the risk is initiated at insertion[26,27]. Strict aseptic techniques at insertion and prophylactic use of antibiotics may be helpful especially in our environment where the prevalence of sexually transmitted infection is very high[16,24,27,28]. The reasons for discontinuation were similar to the findings of otherstudies[17,19,29] Thirty-two (4.9%) of the clients requested for removal of the IUCD due to husband's request. The husbands may have requested for the removal due to discomfort experienced during sexual intercourse as a result of the IUCD thread in the vagina.The role of men in contraceptive decision making cannot be over emphasized[30,31]. Out of the 18 cases of missing IUCD, thirteen were found within the uterine cavity, four in the pelvis and one in the urinary bladder. These were all retrieved. Those whose IUCD were retrieved from the uterine cavity had new IUCD reinserted while those with transmigrated IUCD opted for other methods of family planning following treatment. Transmigration is a well documented side affect of IUCD[32,33]. One client had a confirmed intrauterine pregnancy after twenty-eighty months of IUCD use (Pearl index of 0.007 per 100 woman years).This is similar to some documented reports[34,35].Our expulsion rate of 1.2% culminating in discontinuation is lower than that observed in Enugu[16]. This may be due to the fact that most of our IUCD were inserted outside the Puerperuim. This low expulsion rate can further be reduced with the use of gynaefix IUCD which can even be used safely in the puerperium as the incorporated chromic catgut suture can anchor the IUCD in place for 3-5 weeks[25].

CONCLUSION

While the intrauterine contraceptive device in our environment is an effective method of contraception with low failure rate, its uptake in our centre is low. The reason for this low uptake is unknown, but may be due to perceived risk of side effects and poor awareness amongst others.

Concerted efforts geared towards improving the uptake rate amongst our women should be employed. This entails better use of the mass media to ensure wider dissemination of information which was revealed to be under utilized in our study; and the need to introduce the new generation IUCDs into our family planning services. These have few side effects with improved contraceptive uptake rate. This study would have yielded more information if a prospective study was conducted and it would have solved the problem of missing data encountered in the survey.

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